U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

APPALACHIAN FOREST EXPERIMENT STATION

PLANTING CHART; SOUTHERN APPALACHIAN AND PIEDMONT REGIONS

Species Recommended for Planting and Their Requirements

Species to be planted[1]	Soil and site characteristics needed for planting success
Black Walnut	1. Lower slopes, coves, well drained bottoms, and sink holes. 2. No apparent erosion, top layer of dark colored soil (topsoil) 8 inches or more deep. 3. Topsoil and at least 16 inches of soil layer beneath loose and friable or mellow[2] when worked, does not become hard and cloddy, drainage good.[3] 4. Light to moderate cover of vegetation desirable, moderately heavy cover usually not harmful, cover of rank weeds, blackberry, or sassafras and blackberry indicates good sites, avoid heavy sod and broomsedge.[4] Walnut will not grow on dry, exposed slopes and ridges and abandoned old fields with a shallow topsoil and heavy, compact under layer.

1/Species with similar soil and site requirements are grouped together.

2/The physical nature of the top layers of soil is very important for planting success of all species. The loose, crumbly, friable soils are generally favorable, and for hardwood success they are necessary. The dense, compact soils which become cloddy and slick when plowed are generally unfavorable. The pines and red cedar, however, will succeed on this type of soil.

3/Drainage refers to downward movement of water in soil. Inadequate or poorly drained areas are shown by mottled or blue to grey subsoils.

4/A fairly good measure of site quality is the rapidity with which abandoned fields pass from the early weed stage of vegetation to a generous cover of briars or hardwood brush. The best sites usually go into blackberry briars or brush almost immediately. The medium to poor sites gradually pass into broomsedge and later into briars or brush. Freshly abandoned fields close to seed-producing pine stands usually are soon covered with pine seedlings and do not need planting.

PLANTING CHART; SOUTHERN APPALACHIAN AND PIEDMONT REGIONS (Cont.)

Species Recommended for Planting and Their Requirements

Species to be planted	Soil and site characteristics needed for planting success
Yellow-poplar[5/] Black Locust White Ash	1. North and east slopes, lower to middle south and west slopes, coves, well drained bottoms, and sink holes. Except for locust, very steep southerly slopes should be avoided. Locust will tolerate exposed sites if soil conditions are favorable. 2. No apparent erosion, top layer of dark colored soil (topsoil) 6 inches or more deep. 3. Topsoil and at least 12 inches of soil layer beneath loose and friable or mellow when worked, does not become hard and cloddy, drainage good. 4. Moderate to heavy cover of briars, tall weeds and brush (sassafras, etc.) beneficial for yellow-poplar and white ash. Light open cover beneficial for black locust. Dense, rank briars and weeds indicate good sites, avoid heavy sod and broomsedge without briars or some brush. These hardwoods will not grow on dry exposed slopes and ridges and abandoned old fields with a shallow topsoil and heavy, compact under layer. Black locust is suitable for deep gully control on light soils or where soil has accumulated in gully bottoms. Locust should be used sparingly in the Piedmont. Pine is usually more successful, even for erosion control.

5/Some species may be planted as mixtures in a checkerboard pattern with 9, 16 or 25 trees to a square. On yellow-poplar sites this species may be mixed with black walnut, white ash, white pine, and shortleaf pine.

PLANTING CHART; SOUTHERN APPALACHIAN AND PIEDMONT REGIONS (Cont.)

Species Recommended for Planting and Their Requirements

Species to be planted	Soil and site characteristics needed for planting success
White Pine 6/	1. North and east slopes, lower to middle south and west slopes, broad ridge tops or upper slopes of low hills. Avoid very steep southerly slopes. 2. Moderate erosion allowable, top layer of dark colored soil (topsoil) 5 inches or more deep. 3. Topsoil loose and friable or mellow when worked, layer beneath may be plastic or moderately compact but not dense and cloddy. Avoid heavy pure clays, drainage should be fair to good. 4. Light, open cover beneficial, broomsedge cover, moderate weed cover, or scattered low brush satisfactory. Avoid tall dense briars or brush. White pine will not succeed on badly eroded old fields with a very shallow topsoil and a dense, heavy clay under layer. At elevations over about 2,500 feet in the Appalachian mountains, soil and site requirements may be slightly relaxed.
Loblolly Pine Shortleaf Pine Pitch Pine 6/	1. All slopes and ridges, avoid poorly drained areas. 2. Severe erosion allowable, top layer of dark colored soil (topsoil) may be absent or mixed with lower layer of reddish soil. 3. Topsoil, if present, may be plastic, under layer may be compact and cloddy and slick when plowed. No special soil conditions needed. 4. Dense and overtopping vegetation causes heavy mortality. Broomsedge, light to moderate weed cover, or bare areas satisfactory. Do not plant shortleaf pine on areas over about 2,500-foot elevation. Substitute pitch pine or Virginia pine. On pure limestone areas it is preferable to substitute red cedar for shortleaf pine. Confine loblolly pine to its approximate range in the Piedmont.

6/ Not recommended for Piedmont planting. Confine to Southern Appalachian regions.

PLANTING CHART; SOUTHERN APPALACHIAN AND PIEDMONT REGIONS (Cont.)

Species Recommended for Planting and Their Requirements

Species to be planted	Soil and site characteristics needed for planting success
Virginia Pine Red Cedar	1. All slopes and ridges. Avoid poorly drained areas. 2. Severe erosion allowable, top layer of dark colored soil may be absent. 3. Dry sites, often with thin soil layer on bed rock with numerous rock outcrops, soil may be compact and cloddy. Plant red cedar on limestone areas and Virginia pine on shale areas. 4. Vegetation usually sparse on these areas, dense vegetation harmful to success. If planted on better sites, especially limestone areas, red cedar may return equal or greater value than other species. In general, do not plant red cedar in the Appalachian mountain region, except on limestone soils. Virginia pine is suitable for gully control. Do not plant red cedar within one-fourth mile of apple orchards.

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